IN THE CLAIMS:

Please cancel claims 1-16 without prejudice and amend the claims as follows:

1-16. (Canceled).

17. (Currently Amended) A method for incremental statistical timing analysis, comprising the steps of:

a. conducting an initial statistical timing analysis and saving one or more arrival tightness probabilities and one or more required arrival tightness probabilities;

b. creating a change list based on ~~the~~ changes to the electrical circuit and ~~the~~ based on one or more statistical timing queries, and assigning levelization parameters, which include arrival times and required arrival times, to locations;

c. conducting incremental statistical forward propagation of the arrival times and the arrival tightness probabilities;

d. conducting incremental statistical reverse propagation of the required arrival times and the required arrival tightness probabilities; and

e. answering the one or more statistical timing queries.

18. (Original) A method, as in claim 17, where the query is one or more of: a statistical arrival time at a node, a statistical required arrival time at a node, a statistical slack at a node, a statistical slew at a node, an arrival tightness probability of an edge, a required arrival tightness probability of an edge, a criticality probability of an edge, a criticality probability of a node, and a probability of a timing test being met.

19. (Original) A method, as in claim 17, where the query requests one or more of the following: a mean, a variance, an independent random part, a sensitivity to a source of variation, a confidence level, and an entire probability distribution of a statistical timing quantity.

20. (Original) A method, as in claim 17, where the query requests a criticality of one or more paths through the electrical circuit.

21. (Currently Amended) A method, as in claim 17, where the query requests a listing of the path through the electrical circuit with the highest probability ~~of~~ being critical.

22. (Original) A method, as in claim 17, where the query requests a listing of a required number of paths through the electrical circuit in order of criticality probability.

23. (Original) A method, as in claim 17, where the query requests a listing of critical paths through the electrical circuit in order of criticality probability until the sum of the criticality probabilities exceeds a required probability threshold.

24. (Original) A method, as in claim 17, where the query requests one or more of: a late mode statistical timing quantity, an early mode statistical timing quantity, a rising statistical timing quantity, and a falling statistical timing quantity.

25. (Original) A method, as in claim 17, where the change is one or more of: a removal of a wire, an addition of a wire, a buffering of a wire, a removal of a gate, an addition of a gate, a removal of a latch, an addition of a latch, a removal of a clock phase, an addition of a clock phase, and a change in the operating conditions under which timing is performed.

26. (Original) A method, as in claim 25, in which a change to the electrical circuit is the undoing of the previous change to the electrical circuit.

27. (Original) A method, as in claim 17, where the electrical circuit is one of a combinational circuit and a sequential circuit.

28. (Original) A method, as in claim 17, where the electrical circuit contains one or more of: a master-slave latch, a transparent latch, a dynamic circuit, and a flip-flop.

29. (Original) A method, as in claim 17, where the electrical circuit has multiple clock phases.

30. (Currently Amended) A method, as in claim 17, where ~~the~~ delay of each component of the electrical circuit is modeled as the sum of one or more of a constant part, a correlated random part, and an independent random part.

31. (Original) A method, as in claim 30, where the con-elated random part of the delay of each component is a function of one or more common sources of variation.

32. (Currently Amended) A method, as in claim 17, where a first statistical timing analysis propagates timing values as a weighted sum of probability distributions of one or more of ~~the~~ sources of variation.

33. (Currently Amended) A system for incremental statistical timing analysis, comprising:

a. means for conducting an initial statistical timing analysis and saving one or more arrival tightness and one or more required arrival tightness probabilities;

b. means for creating a change list based on ~~the~~ changes to the electrical circuit and ~~the~~ based on one or more statistical timing queries, and assigning levelization parameters, which include arrival times and required arrival times, to locations;

c. means for conducting incremental statistical forward propagation of the arrival times and the arrival tightness probabilities;

d. means for conducting incremental statistical reverse propagation of the required arrival times and the required arrival tightness probabilities; and

e. means for answering the one or more statistical timing queries.

34. (Currently Amended) A computer memory storing a method for incremental statistical timing analysis, the method comprising the steps of:

a. conducting an initial statistical timing analysis and saving one or more arrival tightness probabilities and one or more required arrival tightness probabilities;

b. creating a change list based on ~~the~~ changes to the electrical circuit and ~~the~~ based on one or more statistical timing queries, and assigning levelization parameters, which include arrival times and required arrival times, to locations;

c. conducting incremental statistical forward propagation of the arrival times and the arrival tightness probabilities;

d. conducting incremental statistical reverse propagation of the required arrival times and the required arrival tightness probabilities; and

e. answering the one or more statistical timing queries.

35. (Currently Amended) A product output response to a query produced by a process for incremental statistical timing analysis, the process comprising the steps of:

a. conducting an initial statistical timing analysis and saving one or more arrival tightness probabilities and one or more required arrival tightness probabilities;

b. creating a change list based on ~~the~~ changes to the electrical circuit and ~~the~~based on one or more statistical timing queries, and assigning levelization parameters, which include arrival times and required arrival times, to locations;

c. conducting incremental statistical forward propagation of the arrival times and the arrival tightness probabilities;

d. conducting incremental statistical reverse propagation of the required arrival times and the required arrival tightness probabilities; and

e. providing the output response by answering flue one or more statistical timing queries.